SUPREME COURT OF THE STATE OF NEW YORK
COUNTY OF SUFFOLK

———————————————————————X

DENISE BROUARD and GERALD BROUARD,

Plaintiff,

Index No.: 28560/05

-Against-

Supplemental Affirmation

JAMES CONVERY, P.V. HOLDING CORP. and
AVIS RENT A CAR SYSTEM, INC.,

Defendants.

———————————————————————X

APOSTOLOS JOHN TSIOURIS, M.D., being duly sworn, deposes, says and affirms the truth of the following matters under penalty of perjury:

1. I am Chief of Neuroradiology at The NewYork-Presbyterian Hospital – Weill Cornell Medicine in New York, NY. My rank is Associate Professor of Clinical Radiology. I have 17 years of experience in an active clinical neuroradiology practice, in which my primary responsibilities are interpreting CT and MRI scans of the brain and spine. I also teach two courses at the Weill Cornell Medical School and have educated and mentored many residents and fellows in Radiology, Neurosurgery, Neurology, and Neuroophthalmology over the years. I have been actively involved in multiple research studies and have published over 100 peer-reviewed scientific papers, including papers on diffusion tensor imaging (DTI) in the setting of traumatic brain injury. I have also authored multiple chapters and a textbook on brain imaging. I routinely analyze and review DTI data sets for the purposes of neurosurgical brain tumor pre-operative planning. I am also co-chair of the American College of Radiology (ACR) TBI-RADS committee and co-chair of the ACR Data Science Institute (DSI) for Neuroradiology.

Lastly, I am also a committee member for the ACR Appropriateness Criteria for Head Trauma.

2. I have testified in other proceedings relative to my expert opinions and knowledge and I will testify in Court at any hearings and/or trials as required. All of my opinions herein are stated with a reasonable degree of medical and scientific certainty.

3. My duly sworn affidavit dated 8/22/16 and affirmation dated 7/16/18, exhibits to the original motion at issue herein are annexed to my Affirmation dated the same as this supplemental affirmation, incorporated by reference as though more fully set forth at length herein and for the Court's convenience and to further set forth my qualifications. All of my prior sworn statements still hold 100% true.

4. This supplemental affirmation is submitted as a response to Dr. Lipton's January 2021 Affirmation regarding the issue of what DTI data would need to be disclosed if DTI was admissible. This is written as a supplement affirmation because if DTI remains precluded then the issue of what data regarding the study needs to be provided to opposing experts/counsel becomes moot.

5. Dr. Lipton continues to refuse to provide the relevant DTI data necessary, now claiming that his control MRI data can be used to generate 3-D images of subject's faces, which would entail a gross breach of HIPAA-protected personal and confidential health information. By this statement, Dr. Lipton is implying that a Defense expert who had access to his control data would maliciously reconstruct the facial structures of his control patients, study their appearance, and then possibly accidentally identify them in life. This argument is absurd. Although there is limited research on this topic, a 2011 paper concluded that when using advanced AI facial recognition software, 3D facial reconstructions generated from medical imaging were *only 27.5% accurate* in matching the patient correctly to their

corresponding photograph.[1] Having myself processed thousands of 3D head data sets over the years, I believe that it is very difficult to even guess whether the patient is a man or woman, let alone positively identify them. It is also important to note that these normal control subjects were most likely recruited as part of a research study, and to be included in a normative DTI database, *should have had no pertinent medical history*. Even if a Defense expert were to take the time to reconstruct their facial structures and study them, a ridiculous notion in itself, and then accidentally and randomly identify them, all that could be ascertained is that they were a normal volunteer for a Dr. Lipton research study years ago. No other identifying information, not even their name or age, would be available from the requested de-identified data set and none of their HIPAA protected medical information would be known.

6. Dr. Lipton again incorrectly points out that "all relevant information" about the control group has already been furnished. However, to assess his DTI analysis utilizing similar whole brain voxel-based analytic methods critically and objectively, the actual DICOM format[2] DTI data from each control patient is needed. So in reality, all the relevant information has not been provided to the Defense. Since a whole brain voxel-based analysis cannot be reproduced without the DICOM control data because all individual subject DTI analyses must be statistically compared to a control group, with DTI data acquired in the same manner on the same MRI scanner (similar to calibrating an instrument), an independent objective analysis of the Plaintiff's DTI cannot be performed without the missing normative control data.

---

[1] Mazura et al. Facial Recognition Software Success Rates for the Identification of 3D Surface Reconstructed Facial Images: Implications for Patient Privacy and Security. *Journal of Digital Imaging* 2011

[2] DICOM, or DIgitial Imaging and Communications in Medicine – is the international standard for medical images and related information. It defines the formats for medical images that can be exchanged with the data quality necessary for clinical use (www.dicomstandard.org).

7. Dr. Lipton then reiterates that *"any abnormalities in the Ms. Brouard's DTI were identified where her FA value deviated sufficiently (more than 3 standard deviations) from the mean derived from the control subjects"*. However, the facet that these brain regions identified as "abnormal" deviated by greater than 3 standard deviations *highlights the inaccuracy of Dr. Lipton's technique or points to an alternative non-traumatic cause for these findings*. Most papers on DTI performed in the setting of a mTBI demonstrate *less than 1 standard deviation in the FA metric in the mTBI groups*[3]. If the Plaintiff's FA values deviated by greater than 3 standard deviations, then she would have been originally diagnosed with an unequivocal severe TBI (probably presenting in a coma or resulting in a prolonged hospital admission) at the time of the accident and not a contested alleged mild TBI.

8. Ms. Cannata and Dr. Lipton claim that *"Defendants sought the images of the control group subjects' brains with which the Plaintiff's brain had been compared, the proprietary (not patented) algorithms used to undertake this comparison, and the hardware, software, and process employed by Montefiore for all patients who undergo MRI with DTI."* This is not true. Defendants only need a description of the acquisition parameters, hardware and software used, and the analysis performed by Dr. Lipton as well as *the actual DICOM DTI data for the control group which has not been produced* to perform our own independent whole brain voxel-based comparison of Plaintiff's DTI study. No patents would be infringed upon by this request. Since the control DTI data is a prerequisite for Dr. Lipton's analysis, an independent review of the study cannot be performed without it.

9. Ms. Cannata also states that *"Montefiore would be violating HIPAA were it to disclose the data Defendant's experts want to see"*. I would opine that if this was the case,

[3] Mac Donald et al. Detection of Blast-Related Traumatic Brain Injury in U.S. Military Personnel. *N Engl J Med* 2011; 364:2091-2100

then Dr. Lipton should not use HIPAA protected data to perform DTI analyses on a subject involved in active litigation. Were the subjects in his control population appropriately consented and made aware that their data would be utilized as a control group for clinical care MRI/DTI studies that would be submitted into evidence to prove or support an alleged TBI?

10. Simply stated, if DTI is deemed admissible, the issue would then turn to whether Plaintiff has disclosed and made available for review to the opposing party, experts, the Court, and the Jury the actual DTI exam. For the purposes of rebuttal, it would be necessary for the Defense experts to have access to the complete data that Dr. Lipton utilized for his DTI analysis to provide his expert opinion. Currently, he inappropriately is the only expert that has access to all the data relied upon in formulating his opinions on the DTI studies. Again, this issue would be moot if DTI remains precluded. Dr. Lipton's DTI data would then be needed if DTI is found to lack general acceptance as discussed in my affirmation dated the same as this supplement (and in the original motion and motion to reargue).

11. Please take notice that any issue not addressed in this affidavit is not to be taken as a consent to the Plaintiff's position. My original affirmation/affidavit debunks all of their theories. This instant affidavit is submitted to inform the Court of new information not in existence at the time the original motions were submitted that supports preclusion, while explaining how Plaintiff has again relied on older information both available and addressed in the prior motions. It is submitted to stress some of the very important points and inaccurate arguments submitted by the Plaintiff. I again refer the Court to my annexed original affirmation and affidavit, read in conjunction with this affidavit, for a complete discussion as to why DTI is not generally accepted.

Dated: 11-June-2021

Apostolos John Tsiouris, M.D.